ORDER NO. SD7807-1408

# Service Manual

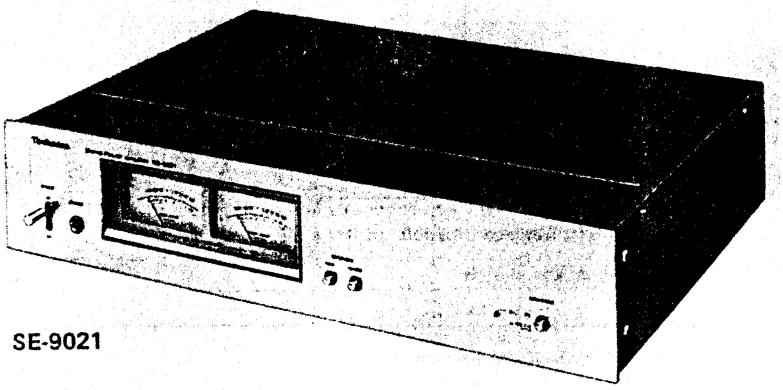
Stereo Power Amplifier

## SE-9021

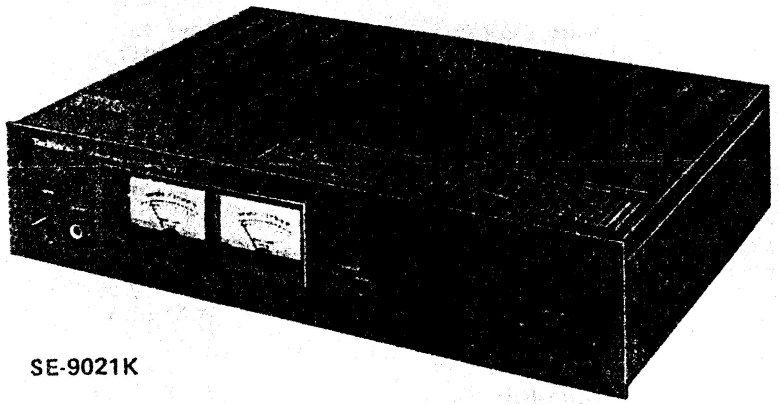
(D), (DG), (X), (XA), (XGH), (XSW), (XGF), (XE)

## SE-9021K

(D), (DG), (XGH), (XSW)



SE-9021



SE-9021K

* The models SE-9021 (D, DG) and SE-9021K (D, DG) are available in Scandinavia and European only.
* The models SE-9021 (X) and SE-9021 (XA) are available in Asia, Latin America, Middle East and Africa only.
* The models SE-9021 (XGH) and SE-9021K (XGH) are available in Holland only.
* The models SE-9021 (XSW) and SE-9021K (XSW) are available in Switzerland only.
* The model SE-9021 (XGF) is available in France only.
* The model SE-9021 (XE) is available in United Kingdom only.

## TECHNICAL SPECIFICATIONS

Specifications are subject to change without notice for further improvement.

[DIN 45 500]

### AMPLIFIER SECTION

| | |
|---|---|
| **1 kHz continuous power output** | |
| **both channels driven** | 2 x 75 W (4 Ω), 2 x 65 W (8 Ω) |
| **40 Hz ~ 16 kHz continuous power output** | |
| **both channels driven** | 2 x 65 W (4 Ω), 2 x 60 W (8 Ω) |
| **20 Hz ~ 20 kHz continuous power output** | |
| **both channels driven** | 2 x 65 W (4 Ω), 2 x 60 W (8 Ω) |
| **Power bandwidth** | |
| **both channels driven, –3 dB** | 5 Hz ~ 45 kHz (4 Ω)<br>5 Hz ~ 60 kHz (8 Ω) |
| **Total harmonic distortion** | |
| **rated power at 1 kHz** | 0.01% (4 Ω, 8 Ω) |
| **rated power at 40 Hz ~ 16 kHz** | 0.01% (4 Ω, 8 Ω) |
| **rated power at 20 Hz ~ 20 kHz** | 0.01% (4 Ω, 8 Ω) |
| **half power at 20 Hz ~ 20 kHz** | 0.005% (4 Ω, 8 Ω) |
| **half power at 1 kHz** | 0.0035% (4 Ω) 0.0025% (8 Ω) |
| **–26 dB power at 1 kHz** | 0.01% (4 Ω) |
| **50 mW power at 1 kHz** | 0.01% (4 Ω) |
| **Intermodulation distortion** | |
| **rated power at 250 Hz: 8 kHz, = 4:1, 4Ω** | 0.015% |
| **rated power at 60 Hz: 7 kHz, = 4:1, SMPTE, 8Ω** | 0.01% |
| **Headphones output level and impedance** | 500 mV/330 Ω |
| **Load impedance MAIN or REMOTE** | 4 ~ 16 Ω |
| **MAIN + REMOTE** | 8 ~ 16 Ω |
| **Residual hum & noise** | 0.2 mV (0.1 mV, IHF A) |
| **Damping factor** | 50 (4 Ω), 100 (8 Ω) |
| **Input sensitivity and impedance** | 1 V, 47 kΩ |
| **S/N** | 100 dB (113 dB, IHF A) |
| **Frequency response** | 20 Hz ~ 20 kHz, +0, –0.1 dB<br>0 Hz ~ 100 kHz, –1 dB |
| **Channel balance, AUX 250 Hz ~ 6300 Hz** | ±0.1 dB |
| **Channel separation, AUX 1 kHz** | 75 dB |

### METER SECTION

| | |
|---|---|
| **Attack time** | 100μsec. |
| **Recovery time** | 750 msec. (0dB → –20 dB) |
| **Meter range** | +3dB ~ –50dB |

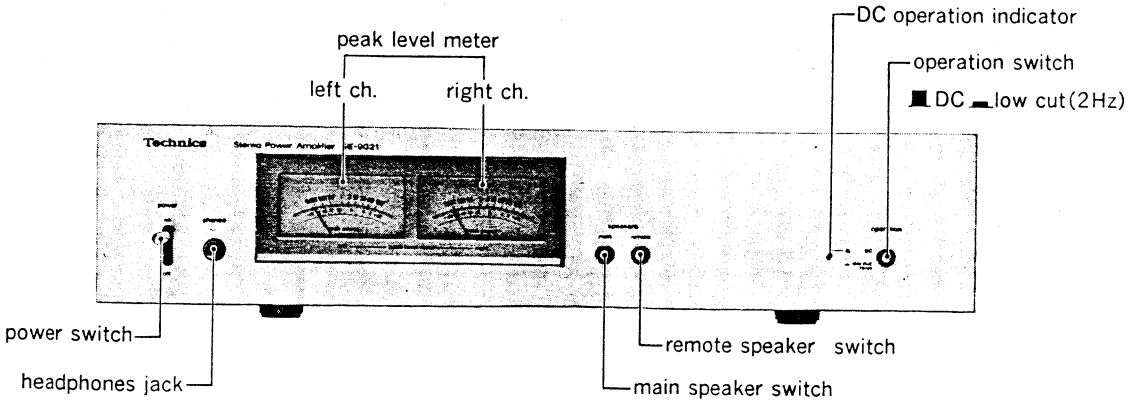
### GENERAL

| | |
|---|---|
| **Power consumption** | 610 W<br>320 W (only for [X] and [XA]) |
| **Power supply** | 50 Hz/60 Hz, 110 V/120 V/220 V/240 V |
| **Dimensions (W x H x D)** | 430 x 98 x 331 mm<br>(16⅞" x 3⅞" x 13⅛") |
| **Weight** | 10 kg (22.1 lb.) |

Technics

Matsushita Electric Trading Co., Ltd.
P.O. Box 288, Central Osaka Japan

## ■ LOCATION OF CONTROLS




## TECHNISCHE DATEN

Spezifikationen können infolge von Verbesserungen ohne Ankündigung geändert werden.

[DIN 45 500]

### VERSTÄRKERTEIL

**Dauertonleistung bei 1 kHz**
**beide Kanäle angesteuert** 2 x 75 W (4 Ω), 2 x 65 W (8 Ω)
**Dauertonleistung bei 40 Hz ~ 16 kHz**
**beide Kanäle angesteuert** 2 x 65 W (4 Ω), 2 x 60 W (8 Ω)
**Dauertonleistung bei 20 Hz ~ 20 kHz**
**beide Kanäle angesteuert** 2 x 65 W (4 Ω), 2 x 60 W (8 Ω)
**Leistungsbandbreite**
**beide Kanäle angesteuert bei –3 dB**
5 Hz ~ 45 kHz (4 Ω), 5 Hz ~ 60 kHz (8 Ω)
**Klirrfaktor**
**Nennausgangsleistung bei 1 kHz** 0,01% (4 Ω, 8 Ω)
**Nennausgangsleistung bei 40 Hz ~ 16 kHz** 0,01% (4 Ω, 8 Ω)
**Nennausgangsleistung bei 20 Hz ~ 20 kHz** 0,01% (4 Ω, 8 Ω)
**halber Ausgangsleistung bei 20 Hz ~ 20 kHz**
0,005% (4 Ω, 8 Ω)
**halber Ausgangsleistung bei 1 kHz**
0,0035% (4 Ω) 0,0025% (8 Ω)
**–26 dB Ausgangsleistung bei 1 kHz** 0,01% (4 Ω)
**50 mW Ausgangsleistung bei 1 kHz** 0,01% (4 Ω)
**Intermodulationsverzerrung**
**Nennausgangsleistung bei 250 Hz: 8 kHz = 4:1,4Ω** 0,015%
**Nennausgangsleistung bei 60 Hz: 7 kHz = 4:1,8Ω** 0,01%
**Kopfhörerpegel und Ausgangsimpedanz** 500 mV/330 Ω
**Lautsprecher-Ausgangsimpedanz**
**MAIN oder REMOTE** 4 ~ 16 Ω
**MAIN und REMOTE** 8 ~ 16 Ω
**Hum & Noise** 0,2 mV (0,1 mV IHF, A)
**Dämpfungsfaktor** 50 (4 Ω), 100 (8 Ω)
**Eingangsempfindlichkeit & Impedanz** 1 V, 47 kΩ
**Fremdspannungsabstand** 100 dB (113 dB, IHF, A)
**Frequenzgang** 20 Hz ~ 20 kHz, +0, –0,1 dB
0 Hz ~ 100 kHz, –1 dB
**Kanalabweichung, AUX 250 Hz ~ 6300 Hz** ±0,1 dB
**Kanaltrennung, AUX 1 kHz** 75 dB

### METERTEIL

**Ausschlagzeit** 100μsec.
**Rückfallzeit** 750 msec (0dB → –20dB)
**Meter Bereich** +3dB ~ –50dB

### ALLGEMEINE DATEN

**Leistungsaufnahme** 610 W
**Netzspannung, umschaltbar**
50 Hz/60 Hz, 110V/120 V/220 V/240 V
**Abmessungen (B x H x T)** 430 x 98 x 331 mm
**Gewicht** 10 kg

## CARACTERISTIQUES TECHNIQUES

Sujet à changement sans préaris.

[DIN 45 500]

### PARTIE AMPLIFICATEUR

**1 kHz, puissance continue**
**les 2 canaux modulés** 2 x 75 W (4Ω), 2 x 65 W (8Ω)
**40 Hz ~ 16 kHz, puissance continue**
**les 2 canaux modulés** 2 x 65 W (4Ω), 2 x 60 W (8Ω)
**20 Hz ~ 20 kHz, puissance continue**
**les 2 canaux modulés** 2 x 65 W (4Ω), 2 x 60 W (8Ω)
**Largeur de bande de puissance**
**les 2 canaux modulés, –3 dB** 5 Hz ~ 45 kHz (4Ω)
5 Hz ~ 60 kHz (8Ω)
**Distorsion harmonique totale**
**pour la puissance nominal, 1 kHz** 0,01% (4Ω, 8Ω)
**pour la puissance nominale, 40 Hz~16 kHz** 0,01% (4Ω, 8Ω)
**pour la puissance nominale, 20 Hz~20 kHz** 0,01% (4Ω, 8Ω)
**pour la demi-puissance nominale, 20Hz ~ 20 kHz**
0,005% (4Ω, 8Ω)
**pour la demi-puissance nominale, 1 kHz**
0,0035% (4Ω) 0,0025% (8Ω)
**pour une puissance mesurée de –26 dB, 1 kHz** 0,01% (4Ω)
**pour une puissance mesurée de 50 mW, 1 kHz** 0,01% (4Ω)
**Distorsion d'intermodulation**
**pour la puissance nominale, 250 Hz: 8 kHz = 4:1,4Ω** 0,015%
**pour la puissance nominale, 60 Hz: 7 kHz = 4:1,8Ω** 0,01%
**Niveau des écouteurs et impédance de sortie** 500 mV/330 Ω
**Impédance de charge** **MAIN ou REMOTE** 4 ~ 16 Ω
**MAIN + REMOTE** 8 ~ 16 Ω
**Ronflement et bruit résiduels** 0,2 mV (0,1 mV IHF, A)
**Facteur d'amortissement** 50 (4 Ω), 100 (8 Ω)
**Sensibilité & impedance d'entrée** 1 V, 47 kΩ
**Signal/Bruit** 100 dB (113 dB, IHF A)
**Réponse de fréquence** 20 Hz ~ 20 kHz, +0, –0,1 dB
0 Hz ~ 100 kHz, –1 dB
**Equilibrage de canaux, AUX 250 Hz ~ 6300 Hz** ±0,1 dB
**Séparation des canaux, AUX 1 kHz** 75 dB

### PARTIE INDICATEUR

**Temps d'"attaque"** 100μsec.
**Temps de rétablissement** 750 msec. (0dB → –20dB)
**Plage des indicateurs** +3dB ~ –50dB

### GENERALITES

**Consommation** 610 W
**Alimentation** 50 Hz/60 Hz, 110 V/120 V/220 V/240 V
**Dimensions (L x H x Pr)** 430 x 98 x 331 mm
**Poids** 10 kg

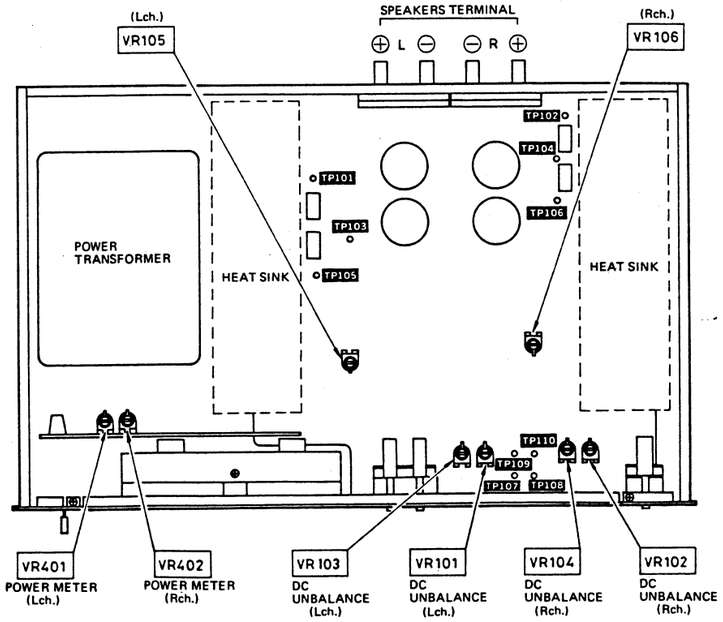
## ■ INSTRUCTIONS D'ALIGNEMENT — FRANÇAIS

**(Note 1)** Préalablement éteindre l'alimentation électrique, puis décharger les 4 condensateurs électrolytiques (6800$\mu$F) en court-circuitant avec une résistance (environ 10 ohms, 3W).
Lors du remplacement des transistors d'alimentation, utiliser 2SD388AA et 2SB541AA qui sont les mêmes dans l'ordre $h_{FE}$.

**Réglages:**
1. Commutateur de fonctionnement. . . . . .C.C.
2. Commutateur de l'enceinte principale . . . . . .MARCHE (ON)
3. Commutateur de l'enceinte à distance . . . . . .MARCHE (ON)

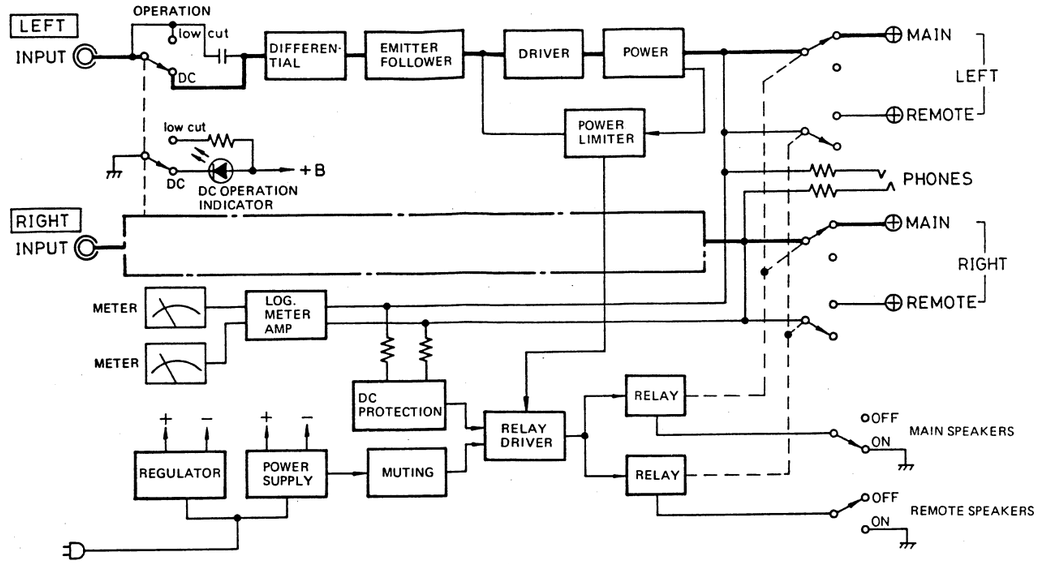
| Eléments à régler | Branchement du Voltmètre à courant continu (C.C) | Composants à régler | Procédé de réglage |
|---|---|---|---|
| Réglage du voltage C.C déséquilibré | Le brancher aux bornes des enceintes des canaux droit et gauche. | VR103 (Can. Gauche)<br>VR104 (Can. Droit) | ○ Court-circuiter respectivement entre TP107 et TP109, TP108 et TP110.<br>○ Effectuer le réglage en utilisant la plus patite gamme de mesure, possible jusqu'à ce que le compteur indique le 0. (zéro). |
| Réglage du voltage C.C déséquilibré | Le brancher aux bornes des enceintes des canaux droit et gauche. | VR101 (Can. Gauche)<br>VR102 (Can. Droit) | ○ Ouvrir le circuit respectivement entre TP107 et TP109, TP108 et TP110.<br>○ Déplacer le commutateur de fonctionnement sur "low cut".<br>○ Effectuer le réglage en utilisant la plus petite gamme de mesure, possible, jusqu'à ce que le compteur indique le 0 (zéro). |
| Réglage de ICQ (courant déwatté du transistor d'alimentation). | + . . . TP101 } (Can. G.)<br>− . . . TP105 }<br>+ . . . TP102 } (Can. D.)<br>− . . . TP106 } | VR105 (Can. Gauche)<br>VR106 (Can. Droit) | ○ Quelques minutes après avoir branché l'alimentation électrique, effectuer le réglage de telle sorte que le compteur indique 13mV. |
| Réglage du compteur d'alimentation | Brancher le voltmètre de courant alternatif aux bornes des enceintes des canaux droit et gauche. | VR401 (Can. Gauche)<br>VR402 (Can. Droit) | ○ Brancher l'oscillateur à la borne d'entrée.<br>○ Appliquer une onde sinusoidale de 1 kHz, et régler le niveau de l'oscillateur de telle sorte que le voltage de sortie de la borne de l'enceinte, soit de 22V.<br>○ Pendant ce temps effectuer le réglage de telle sorte que le compteur indique 0dB. |

## ■ ALIGNMENT POINTS






## ■ BLOCK DIAGRAM




## ■ REPLACEMENT PARTS LIST

6

**NOTES:** 1. Part numbers are indicated on most mechanical parts.
Please use this part number for parts orders.
2. Ⓢ indicates that only parts specified by the manufacturer be used for safety.
3. Guide letters of Resistor and Capacitor indicate;

**Resistors**
ERD..... Carbon
ERF..... Non-Flammable
ERX ..... Metal film
ERG..... Metal oxide

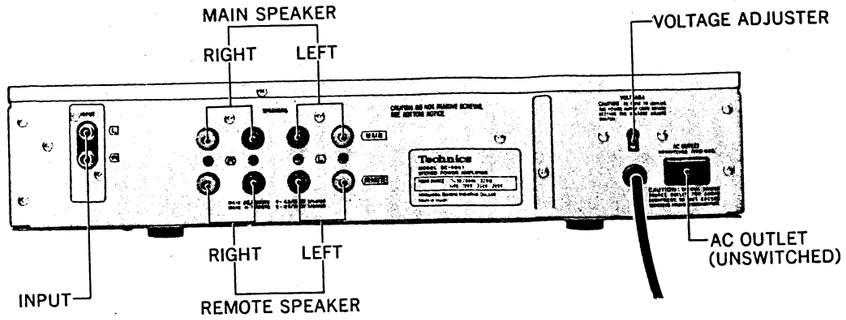
**Capacitors**
ECC..... Ceramic
ECK..... Ceramic
ECE..... Electrolytic
ECQ..... Polyester
ECE □ N .... Non-polar electrolytic

| Ref. No. | Part No. |
|---|---|
| **RESISTORS** | |
| R101, 102 | Ⓢ ERD25TJ563 |
| R103, 104 | ERD25TJ334 |
| R105, 106 | ERD25TJ104 |
| R107, 108 | ERD25TJ104 |
| R109, 110 | ERD25TJ102 |
| R111, 112 | ERD25TJ334 |
| R113, 114 | ERD25TJ103 |
| R115, 116 | ERD25TJ561 |
| R117, 118 | ERD25TJ152 |
| R119, 120 | ERD25TJ223 |
| R121, 122 | ERD25TJ561 |
| R125, 126 | ERD25TJ682 |
| R127, 128 | ERD25TJ332 |
| R129, 130 | ERD25TJ563 |
| R131, 132 | ERD25TJ472 |
| R133, 134 | Ⓢ ERD14FJ271 |
| R135, 136 | ERD25TJ104 |
| R137, 138 | ERD25TJ123 |
| R139, 140 | ERD25TJ103 |
| R141, 142 | Ⓢ ERD14FJ332 |
| R143, 144 | ERD25TJ331 |
| R145, 146 | Ⓢ ERD14FJ561 |
| R147, 148 | ERD25TJ102 |
| R149, 150 | ERD14FJ101 |
| R151, 152 | Ⓢ ERD14FJ561 |
| R153 | Ⓢ ERD14FJ391 |
| R154 | Ⓢ ERD14FJ561 |
| R155, 156 | ERD25TJ272 |
| R157, 158 | ERD25TJ272 |
| R159, 160 | ERD25TJ272 |
| R161, 162 | Ⓢ ERD14FJ561 |
| R163, 164 | Ⓢ ERD14FJ2R2 |
| R165, 166 | Ⓢ ERD14FJ2R2 |
| R167, 168 | Ⓢ ERD14FJ561 |
| R169, 170 | Ⓢ ERF5AKR33 |
| R171 | Ⓢ ERF5AKR47 |
| R172 | Ⓢ ERF5AKR33 |
| R173, 174 | ERX2ANJ4R7 |
| R175, 176 | ERX1ANJ3R3 |
| R177, 178 | ERG2ANJ331 |
| R179, 180 | ERD25TJ105 |

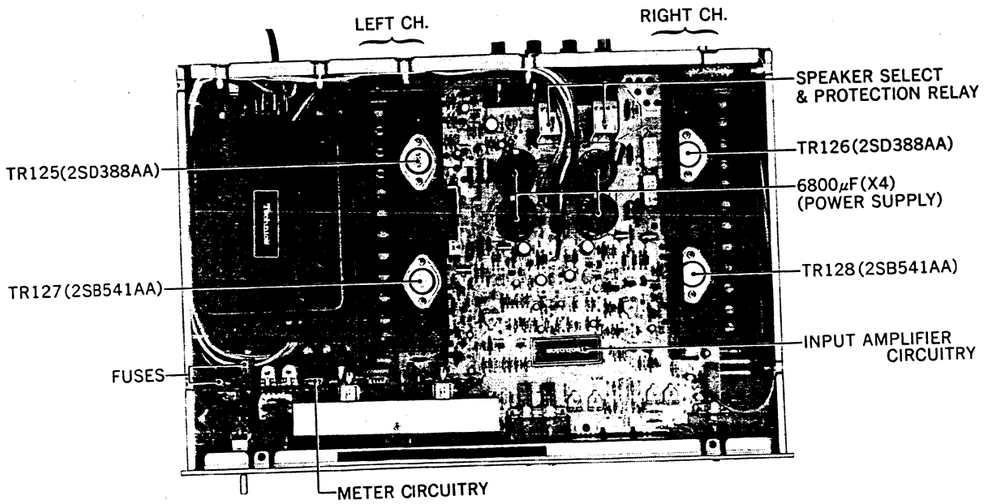
| Ref. No. | Part No. |
|---|---|
| R181, 182 | Ⓢ ERD14FJ561 |
| R183 | ERD25TJ222 |
| R201 | Ⓢ ERD14FJ222 |
| R202 | Ⓢ ERD14FJ472 |
| R203, 204 | ERD25TJ102 |
| R205 | ERD25TJ101 |
| R206 | ERD25TJ561 |
| R207 | ERD25TJ271 |
| R301 | ERD25TJ103 |
| R302 | ERD25TJ392 |
| R303 | ERD25TJ332 |
| R304, 305 | ERD25TJ683 |
| R306, 307 | ERD25TJ223 |
| R308 | ERD25TJ153 |
| R309 | ERD25TJ183 |
| R310 | ERD25TJ393 |
| R311 | ERD25TJ564 |
| R312 | ERD25TJ223 |
| R313 | ERD25TJ681 |
| R314 | ERG1ANJ471 |
| R315, 316 | ERD25TJ103 |
| R317 | ERD25TJ682 |
| R318 | ERD25TJ104 |
| R319 | ERD25TJ223 |
| R401, 402 | ERD25TJ822 |
| R403, 404 | ERD25TJ472 |
| R405, 406 | ERD25TJ683 |
| R407, 408 | ERD25TJ183 |
| R409, 410 | ERD25TJ182 |
| R411, 412 | ERD25TJ102 |
| R413, 414 | ERC14GK825 |
| R415, 416 | ERD25TJ822 |
| R417, 418 | ERD25TJ221 |
| R419, 420 | ERG1ANJ182 |
| R421, 422 | Ⓢ ERD14FJ101 |
| R423 | |

| Ref. No. | Part No. |
|---|---|
| **CAPACITORS** | |
| C101, 102 | Ⓢ ECCD1H680K |
| C103, 104 | ECCD1H390K |
| C105, 106 | ECKD1H271KB |
| C109, 110 | ECKD1H680K |
| C111, 112 | **ECEA1HS010** |
| C113, 114 | ECCD1H060C |
| C115, 116 | **ECEA2AS3R3** |
| C117, 118 | ECKD1H102ZF |
| C119, 120 | **ECEA1AS470** |
| C121, 122 | ECKD1H471KB |
| C123, 124 | ECCD2H330K |
| C125, 126 | ECKD1H333ZF |
| C127, 128 | ECCD1H181K |
| C129, 130 | ECCD2H270K |
| C131, 132 | ECKD1H472MD |
| C133, 134 | ECKD1H681KB |
| C135, 136 | ECKD1H223ZF |
| C137, 138 | ECQM1H104KZ |
| C139, 140 | **ECEA50N1V** |
| C141 | **ECEA1HS100** |
| C143, 144 | ECKD1H333ZF |
| C145, 146 | ECKD1H333ZF |
| C201, 202 | ECET50R682S |
| C203, 204 | **ECEA1JS101** |
| C205, 206 | **ECEA1JS330** |
| C207, 208 | **ECEA1HS100** |
| C209, 210 | **ECEA1HS100** |
| C211 | **ECEA1CS330** |
| C212 | **ECEA50ZR1** |
| C213 | **ECEA1HS3R3** |
| C301 | Ⓢ **ECEA16N47V** |
| C302 | **ECEA1AS470** |
| C303 | **ECEA1AS101** |
| C304 | **ECEA50ZR22** |
| C401, 402 | **ECEA16M10R** |
| C403, 404 | **ECEA1HS100** |
| C405, 406 | |

## ■ LOCATION OF CONTROLS




* This photo shows only the products for [X] and [XA].
* The products for other destinations except [X] and [XA] are not equipped with AC outlet.




## ■ HOW TO REMOVE THE FRONT PANEL

1. Remove five top board-mounting screws, nos. 1 ~ 5 as shown in fig. 1.
2. Remove the top board from chassis.
3. Remove six front panel-mounting screws, nos. 6 ~ 11 as shown in fig. 2.
4. Draw out power switch knob.
5. Remove the front panel from chassis.
6. When remove the bottom board, remove eleven bottom board screws, nos. 10 ~ 20 as shown in fig. 2. (No. 14, 16, 17 and 20 screws are with washer.)

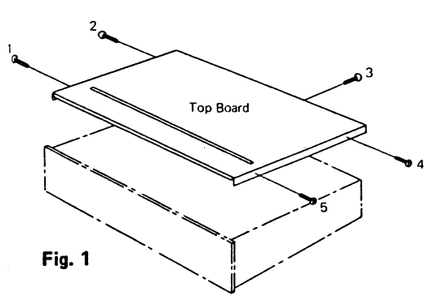



Fig. 1

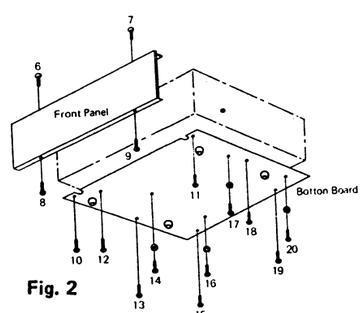



Fig. 2



## ■ ALIGNMENT INSTRUCTIONS — ENGLISH

**(Note 1)** Turn off the power source beforehand, and then discharge all the 4 electrolytic capacitors (6800μF) by short-circuiting with resistance (about 10Ω, 3W).
When replacing power transistors use 2SD388AA and 2SB541AA which are same in $h_{FE}$ rank.

**Setting:**
1. Operation switch . . . . . .DC
2. Main Speaker switch . . . . . .ON
3. Remote speaker switch. . . . .ON

| Adjusting items | DC voltmeter connection | Adjusting parts | Adjusting procedure |
|---|---|---|---|
| DC unbalanced voltage adjustment | Connect it to speaker terminals of L and R channels. | VR103 (Lch)<br>VR104 (Rch) | ○ Short-circuit between TP107 and TP109, TP108 and TP110 respectively.<br>○ Make the adjustment using as small measuring range as possible until the meter indicates 0 (zero). |
| DC unbalanced voltage adjustment | Connect it to speaker terminals of L and R channels. | VR101 (Lch)<br>VR102 (Rch) | ○ Open the circuit between TP107 and TP109, TP108 and TP110 respectively.<br>○ Shift the operation switch to "low cut".<br>○ Make the adjustment using as small measuring range as possible until the meter indicates 0 (zero). |
| ICQ (Idle current of power transistor) adjustment | + . . . TP101 } (Lch)<br>— . . . TP105 }<br>+ . . . TP102 } (Rch)<br>— . . . TP106 } | VR105 (Lch)<br>VR106 (Rch) | ○ A few minutes after turning on the power source, make the adjustment so that the meter indicates 13 mV. |
| Power meter Adjustment | Connect AC voltmeter to speaker terminals of L and R channels. | VR401 (Lch)<br>VR402 (Rch) | ○ Connect RC oscillator to input terminal.<br>○ Apply 1 kHz sine wave, and adjust the oscillator level so that the output voltage of speaker terminal becomes 22 V.<br>○ At that time, make the adjustment so that the meter indicates 0 dB. |

## ■ ANWEISUNGEN FÜR ABGLEICHUNG — DEUTSCH

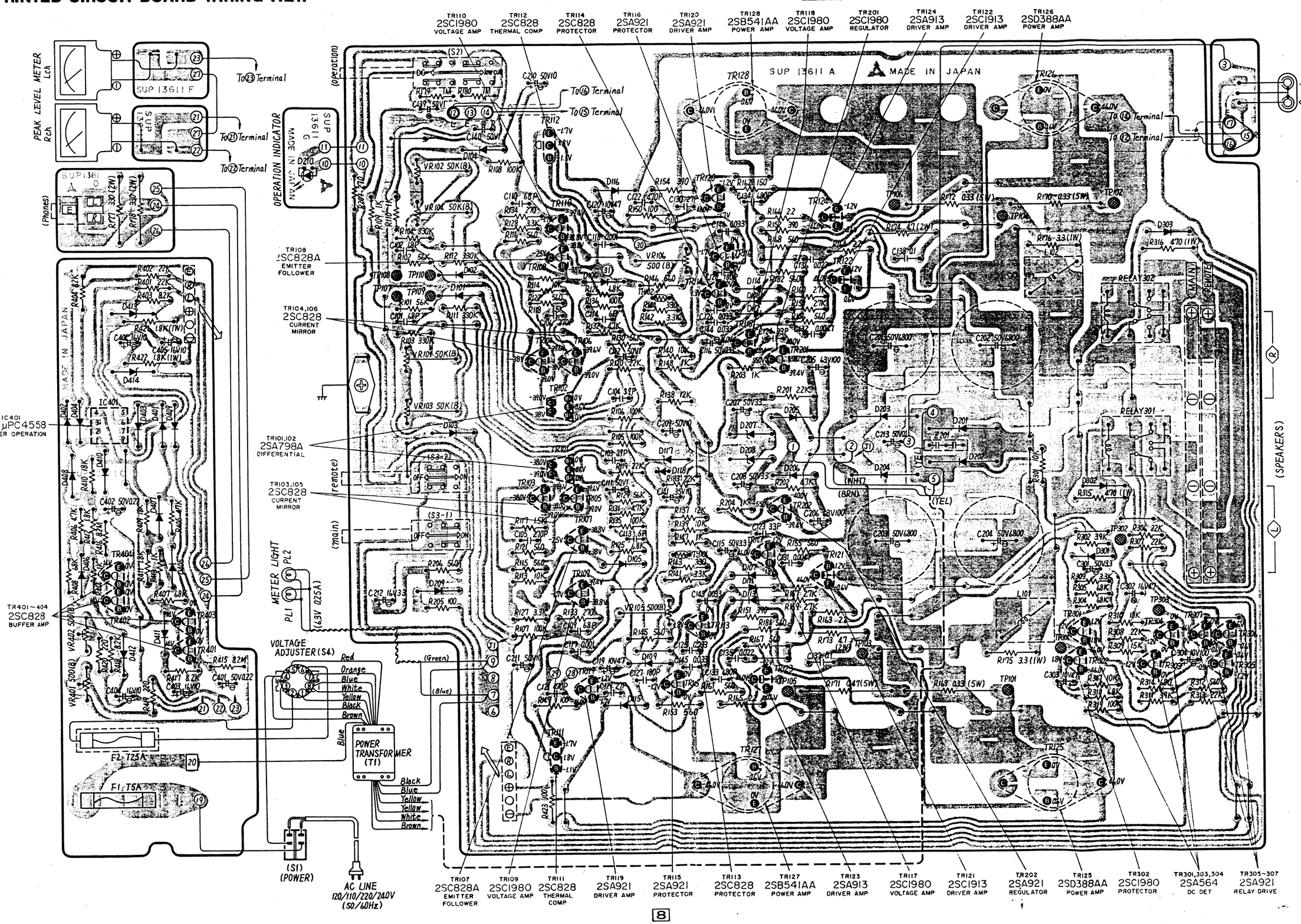
**(Anmerkung 1)** Vor Reparature Storomquelle ausschalten, alle 4 elektrolytische Kondensatoren (6800μF) durch Kurzschluß mit Wiederstand (ca. 10 ohm, 3W) entladen. Bei Auswechselung der Leistungstransistoren die in $h_{FE}$-Bereich gleiche 2SD388AA und 2SB541AA verwenden.

**Einstellung:**
1. Bedienungsschalter . . . . . .DC ( Gleichstrom)
2. Hauptlautsprecherschalter . . . . . .ON
3. Lautsprecherfernschalter. . . . . .ON

| Einstellung | Anschluß des Gleichstrom-Voltmeters | Einzustellende Teile | Einstellve fahren |
|---|---|---|---|
| Ungleiche Gleichstrom-spannung | An Lautsprecher-klemmen des L und R-Kanals anschließen. | VR103 ( L-Kanal)<br>VR104 ( R-Kanal) | ○ Zwischen TP107 und TP109, TP108 und TP110 jeweils kurzschließen.<br>○ Unter Verwendung von möglichst kleinen Meßbereich auf 0 einstellen. |
| Ungleiche Gleichstrom-spannung | An lautspre-cherklemmen des L und R-Kanals anschließen. | VR101 (L-Kanal)<br>VR102 (R-Kanal) | ○ Den Kreis zwischen TP107 und TP109, TP108 und TP110 jeweils öffnen.<br>○ Bedienungsschalter auf "low cut" umschalten.<br>○ Unter Verwendung von möglichst kleinen Meßbereich auf 0 einstellen. |
| ICQ (Blind-strom des Leistungs-transistors) | + . . . TP101 } (L-Kanal)<br>— . . . TP105 }<br>+ . . . TP102 } (R-Kanal)<br>— . . . TP106 } | VR105 (L-Kanal)<br>VR106 (R-Kanal) | ○ Stromquelle einschalten und auf 13 mV einstellen. |
| Leistungs-meßgerät | Wechselstrom-Voltmeter an Lautsprecher-klemmen von L-. und R-Kanal schließen. | VR401 (L-Kanal)<br>VR402 (R-Kanal) | ○ RC-Oszillator an Eingangsklemme schließen.<br>○ Mit Sinuswelle von 1 kHz die Oszillatorspannung so einstellen, daß Ausgangsspannung der Laut-sprecherklemme 22V beträgt.<br>○ Gleichzeitig auf 0 dB einstellen. |

## ■ PRINTED CIRCUIT BOARD WIRING VIEW

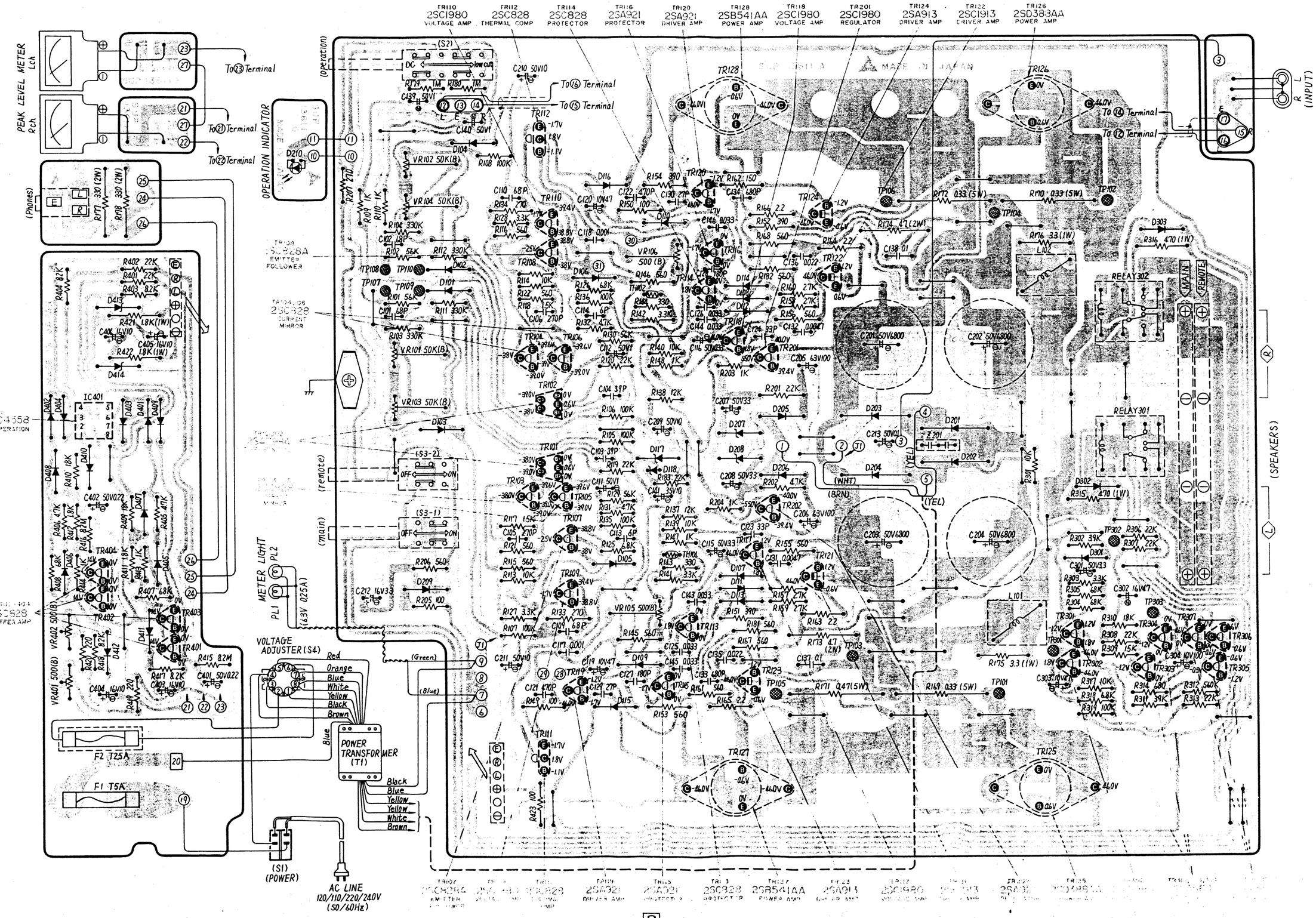
Earth (Ground) Lines




## ■ REPLACEMENT PARTS LIST

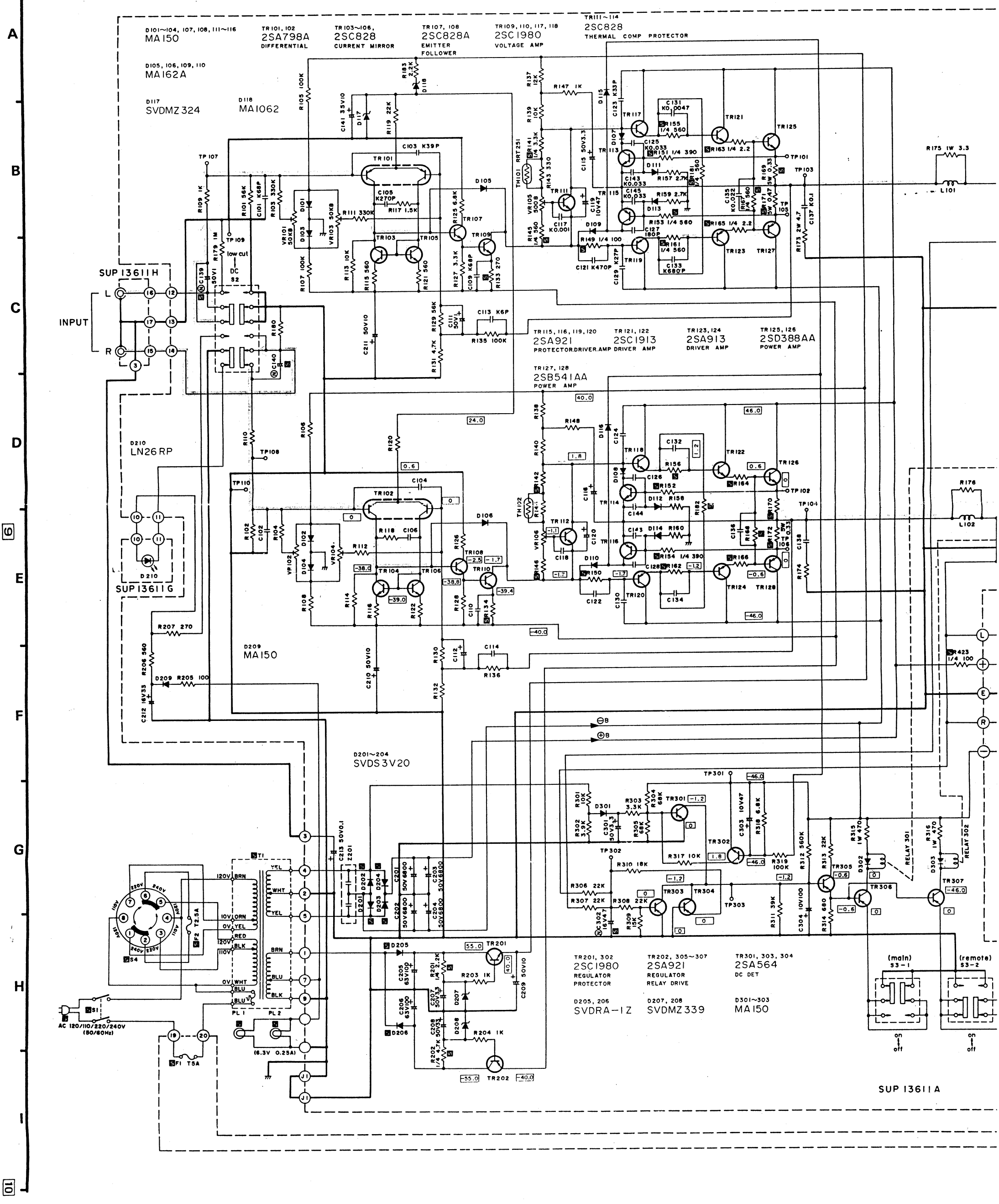
## ■ PRINTED CIRCUIT BOARD WIRING VIEW

Earth (Ground) Lines



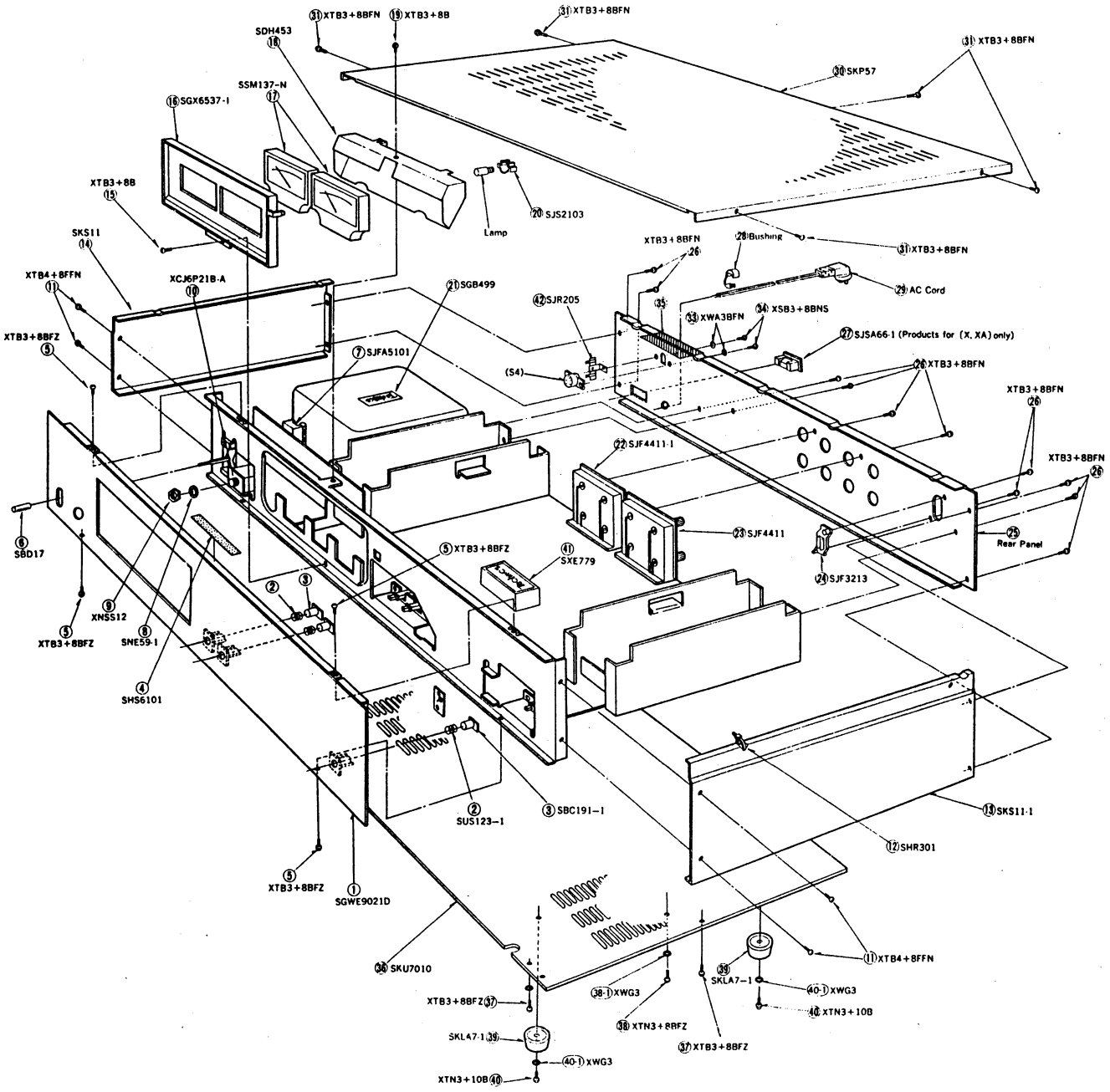

## ■ REPLACEMENT PARTS LIST

# Schematic Diagram ..... Model SE-9021/SE-9021K (D, DG, XGH, XSW, XGF, XE)



R L
(INPUT)

## ■ EXPLODED VIEW




## ■ REPLACEMENT PARTS LIST

**NOTES:**
1. Part numbers are indicated on most mechanical parts. Please use this part number for parts orders.
2. S indicates that only parts specified by the manufacturer be used for safety.

| Ref. No. | | Part No. | Part Name & Description | Per Set | | Remarks |
|---|---|---|---|---|---|---|
| **CABINET and CHASSIS PARTS** | | | | | | |
| 1 | | SGWE9021D | Panel, Front Ass'y | 1 | | ○ |
| 2 | | SUS123-1 | Spring, Push Switches | 3 | | |
| 3 | | SBC191-1 | Button, Push Switches | 3 | | ○ |
| 4 | | SHS6101 | Cloth, Front Panel | 1 | | |
| 5 | | XTB3+8BFZ | Screw, Front Panel M'tg | 4 | | |
| 6 | | SBD17 | Knob, Power Switch | 1 | | |
| 7 | | SJFA5101 | Holder, Fuse (on the meter amp. p.c.b.) | 1 | | |
| 8 | | SNE59-1 | Washer, Headphones Jack | 1 | | |
| 9 | | XNSS12 | Nut, Headphones Jack M'tg | 1 | | |
| 10 | | XCJ6P21B-A | Jack, Headphones | 1 | | |
| 11 | | XTB4+8FFN | Screw, Side Board M'tg | 4 | | |
| 12 | | SHR301 | Clamp. Lead Wire | 7 | | |
| 13 | | SKS11-1 | Side Board, Right | 1 | | * |
| 14 | | SKS11 | Side Board, Left | 1 | | * |
| 15 | | XTB3+8B | Screw, Meter Bracket M'tg | 1 | | |
| 16 | | SGX6537-1 | Bracket, Meter | 1 | | ○ |
| 17 | | SSM137-N | Meter | 2 | | |
| 18 | | SDH453 | Bracket, Meter Light | 1 | | * |
| 19 | | XTB3+8B | Screw, Light Bracket M'tg | 1 | | |
| 20 | | SJS2103 | Holder, Lamp | 2 | | |
| 21 | | SGB499 | Label, Technics | 1 | | * |
| 22 | | SJF4411-1 | Terminal, Left Speaker | 1 | | |
| 23 | | SJF4411 | Terminal, Right Speaker | 1 | | |
| 24 | | SJF3213 | Terminal, Input | 1 | | |
| 25 [D] only | | SGP1570A | Rear Panel | 1 | | ○ |
| 25 | | SGPE9021D | Rear Panel, SGP1570A with Name Plate (SGT17270) | 1 | | ○ |
| 25 [X, XA] only | | SGP1570-1A | Rear Panel | 1 | | ○ |
| 26 | | XTB3+8BFN | Screw, Terminals & Chassis M'tg | 11 | | |
| 27 [X, XA] only | | SJSA66-1 | Socket, AC Outlet | 1 | | |
| 28 | | SHR127 | Bushing, AC Cord | 1 | | |
| 28 [XE] only | | SHR129 | Bushing, AC Cord | 1 | | |
| 29 | S | SJA97 | AC Cord, with Plug | 1 | | |
| 29 [XE] only | S | RJA45ZC | AC Cord | 1 | | |
| 29 [XSW] only | S | SJA111 | AC Cord, with Plug | 1 | | |
| 30 | | SKP57 | Top Board | 1 | | |
| 31 | | XTB3+8BFN | Screw, Top Board M'tg | 5 | | |
| 33 | | XWA3BFN | Washer, Spring | 2 | | |
| 34 | | XSB3+8BNS | Screw, Voltage Adjuster M'tg | 2 | | |
| 35 | | SHS165 | Cloth, Protector | 1 | | |
| 36 | | SKU7010 | Bottom Board | 1 | | |
| 37 | | XTB3+8BFZ | Screw, Bottom Board M'tg | 7 | | |
| 38 | | XTN3+8BFZ | Screw, Bottom Board M'tg | 4 | | |
| 38-1 | | XWG3 | Washer | 4 | | |
| 39 | | SKLA7-1 | Foot, Bottom Board | 4 | | |
| 40 | | XTN3+10B | Screw, Feet M'tg | 4 | | |
| 40-1 | | XWG3 | Washer | 4 | | |
| 41 | | SXE779 | Cover, Transistors | 1 | | |
| 42 | | SJR205 | Terminal, AC Cord | 1 | | |
| (The products for [X, XA] are not provided) | | | | | | |

- (D) and (DG) are available in Scandinavia and European only.
- (X) and (XA) are available in Asia, Latin America, Middle East and Africa only.
- (XGH) is available in Holland only.
- (XSW) is available in Switzerland only.
- (XGF) is available in France only.
- (XE) is available in United Kingdom only.

# SE-9021K (D), (DG), (XGH), (XSW)

**Note:** This parts list included only the changes of the model SE-9021 part list.

| Ref. No. | Change of Part No. SE-9021 → SE-9021K | | Part Name & Description | Per Set (Pcs.) | | Remarks |
|---|---|---|---|---|---|---|
| **CABINET and CHASSIS PARTS** | | | | | | |
| 1 | SGWE9021D | SGWE9021KD | Panel, Front Ass'y | 1 | | ○ |
| 3 | SBC191-1 | SBC191-2 | Button, Push Switches | 3 | | ○ |
| 6 | SBD17 | SBD17-1 | Knob, Power Switch | 1 | | ○ |
| 11 | XTB4+8FFN | XTB4+8FFZ | Screw, Side Board M'tg | 4 | | |
| 13 | SKS11-1 | SKS11-3 | Side Board, Right | 1 | | ○ |
| 14 | SKS11 | SKS11-2 | Side Board, Left | 1 | | ○ |
| 16 | SGX6537-1 | SGX6537-2 | Bracket, Meter | 1 | | ○ |
| 25 | SGP1570A [D] | SGP1570B [D] only | Rear Panel, Product for [D] only | 1 | | ○ |
| | SGPE9021D | SGPE9021KD [XSW, DG, XGH] | Rear Panel, SGP1570B, with Name Plate (SGT17290) | 1 | | ○ |
| | SGP1570-1A [X, XA] | | | | | |
| 26 | XTB3+8BFN | XTB3+8BFZ | Screw, Terminals & Chassis M'tg | 11 | | |
| 27 | SJSA66-1 [X, XA] | Deletion | - - - - - - - - - - - - - - - - | 0 | | |
| 28 | SHR127 | SHR127 | Bushing, AC Cord | 1 | | |
| | SHR129 [XE] | | | | | |
| 29 | SJA97 | SJA97 [D, DG, XGH] | AC Cord, with plug | 1 | | |
| | RJA45ZC [XE] | SJA111 [XSW] only | AC Cord, with Plug (Product for [XSW]) only) | 1 | | |
| | SJA111 [XSW] | | | | | |
| 30 | SKP57 | SKP57-1 | Top Board | 1 | | ○ |
| 31 | XTB3+8BFN | XTB3+8BFZ | Screw, Top Board M'tg | 5 | | |
| 33 | XWA3BFN | XWA3BFZ | Washer, Spring | 2 | | |
| 34 | XSB3+8BNS | XSB3+8FZS | Screw, Voltage Adjuster M'tg | 2 | | |
| 36 | SKU7010 | SKU7010-1 | Bottom Board | 1 | | ○ |
| **ACCESSORIES** | | | | | | |
| A4 | SJP5213-1 | Deletion | - - - - - - - - - - - - - - - - | 0 | | |
| A5 | SJP5215 | Deletion | - - - - - - - - - - - - - - - - | 0 | | |
| **PACKING PARTS** | | | | | | |
| P5 | SPG1679 | SPG1683 | Carton Box | 1 | | ○ |
| | SPG1681 [XGF] | | | | | |
| P6 | SQF1985 | SQF1985 | Instructions Book, Printed Matter | 1 | | ○ |
| | SQF10097 | | | | | |

## ■ REPLACEMENT PARTS LIST

NOTES:
1. Part numbers are indicated on most mechanical parts. Please use this part number for parts orders.
2. S indicates that only parts specified by the manufacturer be used for safety.

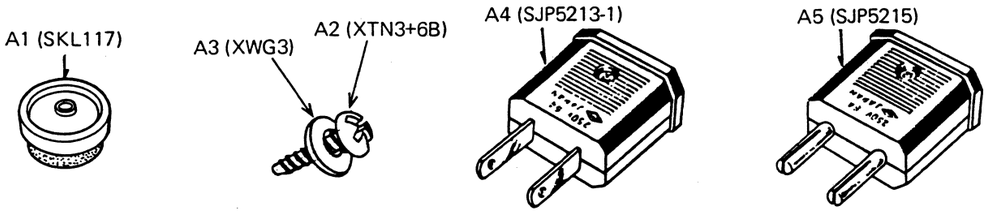
| Ref. No. | | Part No. | Part Name & Description | Per Set | Remarks |
|---|---|---|---|---|---|
| **COILS and TRANSFORMER** | | | | | |
| D210 | | LN26RP | Light Emitting Diode, Operation Indicator | 1 | |
| D413, 414 | | SVDMZ314 | Diode, 14 Zener | 2 | |
| L101, 102 | S | SLOY15G-3U | Coil, Characteristic Compensation | 2 | ○ |
| T1 | S | SLT9Q3 | Transformer, Power | 1 | |
| **COMPONENT COMBINATION** | | | | | |
| Z201 | | EXRFS2032SA | Component Combination, Noise Killer | 1 | |
| **THERMISTERS** | | | | | |
| TH101, 102 | | RRT251 | Thermister, Temperature Compensation | 2 | |
| **VARIABLE RESISTORS** | | | | | |
| VR101, 102, 103, 104 | | **EVLS3AA00B54** | DC Balance Adjustment, 50kΩ (B) | 4 | |
| VR105, 106 | | **EVLS3AA00B52** | ICO Adjustment, 500Ω (B) | 2 | |
| VR401, 402 | | **EVLS0AA00B52** | Meter Adjustment, 500Ω (B) | 2 | |
| **LAMPS** | | | | | |
| PL1, 2 | S | XAMR62SA | Pilot Lamp, 6.3V 0.25A | 2 | |
| **FUSES** | | | | | |
| F1 | S | XBA2C50TR0 | Fuse, T5A (250V) Power Source | 1 | |
| F2 | S | XBA2C25TR0 | Fuse, T2.5A (250V) Power Source | 1 | |
| **SWITCHES** | | | | | |
| S1 | S | ESL21179 | Switch, Power Source | 1 | |
| S2 | | SSH93 | Switch, Operation | 1 | |
| S3 | | SSH249 | Switch, Speakers | 1 | |
| S4 | S | ESE37200 | Switch, Voltage Adjuster | 1 | |
| **RELAY** | | | | | |
| RLY301, 302 | S | SSY19-1 | Relay, Speaker | 2 | |

| Ref. No. | | Part No. | Part Name & Description | Per Set | Remarks |
|---|---|---|---|---|---|
| **INTEGRATED CIRCUIT** | | | | | |
| IC401 | | SVIUPC4558C | IC, Meter Operation Amplifier | 1 | |
| **TRANSISTORS** | | | | | |
| TR101, 102 | | **2SA798A-G2** | Transistor, Input Differential Amplifier (Use in ranks F2 or G2) | 2 | |
| TR103, 104, 105, 106, 107, 108 | | **2SC1328-T** | Transistor, Current Mirror & Emitter Follower (Use in ranks S, T or U) | 6 | |
| TR109, 110 | | 2SC1980-R | Transistor, Pre-Driver (Use in ranks R, S or T) | 2 | |
| TR111, 112 | | **2SC828A-R** | Transistor, Temperature Compensation | 2 | |
| TR113, 114 | | **2SC1328-T** | Transistor, Current Limiter (Use in ranks S, T or U) | 2 | |
| TR115, 116 | | 2SA921-R | Transistor, Current Limiter (Use in ranks R, S or T) | 2 | |
| TR117, 118 | | 2SC1980-R | Transistor, Driver (in ranks S or R) } Use pair ranks | 2 | |
| TR119, 120 | | 2SA921-R | Transistor, Driver (in ranks S or R) | 2 | |
| TR121, 122 | | 2SC1913-Q | Transistor, Driver (in ranks Q or R) } Use pair ranks | 2 | |
| TR123, 124 | | 2SA913-Q | Transistor, Driver (in ranks Q or R) | 2 | |
| TR125, 126 | | 2SD388AA-Q | Transistor, Power (in ranks Q, R or S) } Use pair ranks | 2 | |
| TR127, 128 | | 2SB541AA-Q | Transistor, Power (in ranks Q, R or S) | 2 | |
| TR201, 302 | | 2S1980-R | Transistor, Regulator & Relay Switching (Use in ranks R, S or T) | 2 | |
| TR202, 305 | | 2SA921-R | Transistor, Regulator & Relay Switching (Use in ranks R, S or T) | 4 | |
| TR301, 303, 304 | | **2SA668A1-R** | Transistor, DC Detector (Use in ranks P, Q or R) | 3 | |
| TR401, 402, 403, 404 | | **2SC1328-T** | Transistor, Meter Logarithm Amplifier (Use in ranks R, S or T) | 4 | |
| **DIODES** | | | | | |
| D101 ~ 104, 107, 108, 111 ~ 116 | | MA150 | Diode, Bias Supply | 12 | |
| D105, 106, 109, 110 | | MA162A | Diode | 4 | |
| D117 | | SVDMZ324 | Diode, 24V Zener | 1 | |
| D118 ~ 204 | S | MA1062 | Diode, 6.2V Zener | 1 | |
| D205, 206 | S | SVDS3V20 | Rectifier | 4 | |
| D207, 208 | | **SM112** | Rectifier | 2 | |
| D209, 301 ~ 303, 401 ~ 412 | | SVDMZ339B MA150 | Diode, 39V Zener<br>Diode, Power Muting, Pulse Killer & Meter Logarithm Amplifier Circuit | 2<br>16 | |

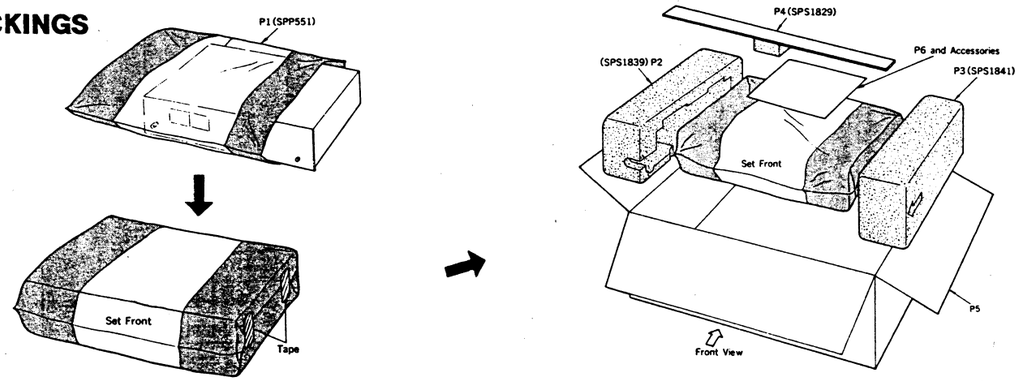


| Ref. No. | | Part No. | Part Name & Description | Per Set | Remarks |
|---|---|---|---|---|---|
| **ACCESSORIES** | | | | | |
| A1 | | SKL117 | Foot | 4 | |
| A2 | | XTN3+6B | Screw, Feet M'tg } XTW3+6B | 4 | |
| A3 | | XWG3 | Washer | 4 | |
| A4 [X, XA] only | S | SJP5213-1 | Plug Adapter, AC Power | 1 | |
| A5 [X, XA] only | S | SJP5215 | Plug Adapter, AC Power | 1 | |
| **PACKING PARTS** | | | | | |
| P1 | | SPP551 | Polyethylene Bag | 1 | |
| P2 | | SPS1839 | Pad, Left Side | 1 | ○ |
| P3 | | SPS1841 | Pad, Right Side | 1 | ○ |
| P4 | | SPS1829 | Pad, Upper Side | 1 | ○ |
| P5 | | SPG1679 | Carton Box | 1 | ○ |
| P5 [XGF] only | | SPG1681 | Carton Box | 1 | ○ |
| P6 | | SQF1985 | Instructions Book, Printed Matter | 1 | ○ |
| P6 [X, XA] only | | SQF10097 | Instructions Book, Printed Matter | 1 | ○ |

## ■ ACCESSORIES



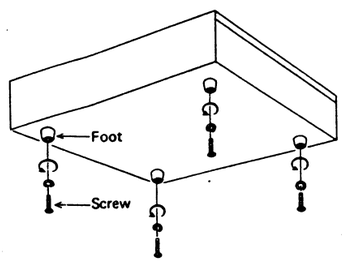

## ■ PACKINGS

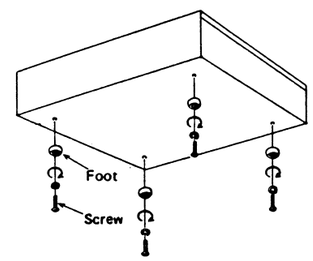



## ■ ATTACHMENT OF FEET (INCLUDED)

This unit has an extra set of 4 feet which, if installed, lower the height by 5mm, to 93mm.
These feet are especially useful if other audio components in this series (models SU-9011 and ST-9031) are stacked one on top of another.

• Attachment
① Remove the feet already attached to the bottom of the unit.
② Attach the other set of feet (included) by using the screws (also included). Use the same holes as for the original feet.



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